

depositing a second dielectric layer on the first patterned conductive layer and on the gap fill layer, wherein the as-deposited gap fill layer and/or second dielectric layer have a dielectric constant no greater than about 3;

forming a photoresist mask on the second dielectric layer;

forming a through-hole in the second dielectric layer exposing the upper surface of the first conductive feature; and

removing the photoresist mask and cleaning the through-hole with a plasma containing carbon tetrafluoride ( $\text{CF}_4$ ) and water vapor ( $\text{H}_2\text{O}$ ), wherein such that the dielectric constant of the as deposited gap fill layer and/or the second dielectric layer does not increase more than about 15% [have a dielectric constant no greater than about 3].

14. (Amended) A method of manufacturing a semiconductor device, the method comprising:

depositing a layer of dielectric material, having an as-deposited dielectric constant no greater than about 3, over a conductive region or conductive feature;

forming a through-hole in the dielectric layer exposing the upper surface of the conductive region or conductive feature; and

removing the photoresist mask and cleaning the through-hole with a plasma containing carbon tetrafluoride ( $\text{CF}_4$ ) and water vapor ( $\text{H}_2\text{O}$ ) such that the dielectric constant of the dielectric layer does not increase more than about 15%.

Please cancel claims 4 and 15.